REMARKS

The Applicant has canceled the non-elected claims, and amended claim 13. The pending claims are patentable over the references.

The Examiner on page 4 of the office action states that the Jin reference "does not set forth the specific, positively set forth step of heating to fuse the low melting point alloy as claimed. However, note that the figures depicted do show the particles attached integrally, which is readable on the claimed step of fusing." This conclusion is respectfully traversed.

Jin discloses particles made of iron, nickel, cobalt or an alloy, or a ferrite material. These may be coated with silver or gold or an alloy thereof. Column 2 lines 53-57. In example 2 (column 4 line 5), Jin discloses curing the silicone resin at 100 Centigrade. Enclosed herewith are copies of three data resources printed off of the internet that establish that the melting points of gold and silver are each over 900 Centigrade. Accordingly, under the conditions disclosed by Jin, the coating on the particles could not melt, and thus it is impossible for Jin's particles to be fused as in claim 8 herein.

It is certainly not permissible under the law of 35 U.S.C. 103 to interpret a drawing in a reference to teach what is clearly not taught on the face of the reference. Looked at another way, it is impossible to interpret Jin as disclosing or even suggesting a meltable particle coating as in claim 8. Accordingly, Jin cannot be used to reject claims 8-10.

As to claim 13, the claim has been amended to recite a particular maximum melting temperature (see page 5 lines 4-5 for support). The Jin columns comprise a metal such as nickel (melting point 1453 C) coated with gold or silver (melting points over 900 C). Accordingly, there is no disclosure or suggestion in Jin to make at least some of the columns of particles melt at a temperature of no more than about 140 C. Jin thus does not make claim 13 obvious.

In summary, Jin discloses particle columns in which no part of the columns melts at less than 900 C, and discloses curing at 100 C, almost an order of magnitude less than this particle

melting temperature. Accordingly, there is no possible interpretation of Jin that can teach or even suggest either fused or liquefied particle columns as claimed. The claims are thus allowable.

Also enclosed is a 3-Month Petition for Extension of Time to Reply. Please charge Deposit Account No. 50-1582.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned in Westborough, Massachusetts, (508) 898-1501.

Respectfully submitted,

Brian M. Dingman, Esq.
Reg. No. 32,729

MELTING POINTS

of some common metals

Temperatures are approximate.

metal	degrees K	degrees C	degrees F
aluminum	942°	669°	1236°
copper	1357°	1083°	1982°
gold	1338°	1064°	1948°
iron/steel	1808°	1535°	2795°
lead	601°	328°	622°
nickel	1726°	1453°	2647°
platinum	2045°	1772°	3222°
silver	1235°	962°	1764°
tin	505°	232°	450°
titanium	1933°	1660°	3020°
zinc	693°	420°	787°

Note that the following metals are alloys of the above:

- brass - copper/zinc
- bronze - copper/tin; usually, 90%+ copper (common is 95%) [1]
- electrum - silver/gold

Also note that although aluminum and titanium are quite common in the Earth's crust, they do not occur naturally in a metallic state. Their manufacture was not mastered until the 20th century. (Aluminum was first easily produced by Charles Martin Hall in the town of Oberlin, OH.)

[1] Sometimes metals other than tin are used, although tin is the most common.

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Melting Points of Various Metals

	Melting Points	
Metal	**Fahrenheit (f)**	**Celsius (c)**
Aluminum	1218	659
Brass	1700	927
Bronze	1675	913
Cast Iron	2200	1204
Copper	1981	1083
Gold	1945	1063
Lead	327	163
Magnesium	1204	651
Nickel	2646	1452
Silver	1761	951
Steel	2500	1371
Tungsten	6150	3399
Wrought Iron	2700	1482
Zinc	787	419

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Will-Call and Pickup Information

The specific gravity of a metal or alloy is merely the weight in grams of one cubic centimeter. When it is more convenient to work in troy weights, the number of ounces per cubic inch of any metal or alloy may be found by multiplying its specific gravity by the constant 0.52686.

Melting Point and Weights of Various Metals and Alloys

Metal	Symbol	Melting Point °F	Melting Point °C	Specific Gravity	Weight in Troy Ozs/Cu In
Aluminum	Al	1220	660	2.70	1.423
Antimony	Sb	1167	630	6.62	3.448
Beryllium	Be	2340	1280	1.82	0.959
Bismuth	Bi	520	271	9.80	5.163
Cadmium	Cd	610	321	8.65	4.557
Carbon	C	-	-	2.22	1.170
Chromium	Cr	3430	1890	7.19	3.788
Cobalt	Co	2723	1495	8.90	8.900
Copper	Cu	1981	1083	8.96	4.719
Gold, 24K Pure	Au	1945	1063	19.32	10.180
Iridium	Ir	4449	2454	22.50	11.849
Iron	Fe	2802	1539	7.87	4.145
Lead	Pb	621	327	11.34	5.973
Magnesium	Mg	1202	650	1.75	0.917
Manganese	Mn	2273	1245	7.43	3.914
Molybdenum	Mo	4760	2625	10.20	5.347
Nickel	Ni	2651	1455	8.90	4.691
Osmium	Os	4892	2700	22.50	11.854
Palladium	Pd	2831	1555	12.00	6.322
Phosphorus	P	111	44	1.82	0.959
Platinum, Pure	Pt	3224	1773	21.45	11.301
15% Irid Plat	-	3310	1821	21.59	11.301
10% Irid Plat	-	3250	1788	21.54	11.349
5% Irid Plat	-	3235	1779	21.50	11.325
Rhodium	Rh	3571	1966	12.44	6.553
Ruthenium	Ru	4500	2500	12.20	6.428
Silicon	Si	2605	1430	2.33	1.247
Silver, Pure	Ag	1761	961	10.49	5.525
Silver, Sterling	-	1640	893	10.36	5.457
Silver, Coin	-	1615	879	10.31	5.430
Tin	Sn	450	232	7.30	3.846